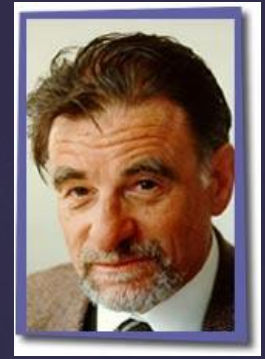




Johannes Bednorz and Karl Müller

High-Temperature Superconductivity



Superconductivity

- Superconductivity is when a material has no electrical resistance
- This was first discovered in 1911 using solid mercury at 4.2K
- Before 1986 superconductivity had only been observed at extremely low temperatures in metals

The Discovery

- In 1986 Bednorz and Müller created a ceramic that experience superconductivity at a much higher temperature than seen before
- This discovery soon was soon followed by other similar compounds
- They were awarded the Nobel Prize for Physics in 1987
- The higher temperatures allow liquid nitrogen as opposed to helium to be used

Applications

- Superconductivity is used in MRI machines, mass spectrometers, and many other devices
- Superconductivity is found at higher temperatures it becomes cheaper to use
- This would allow it to be used in many more ways, from maglev trains to the energy grid

